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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/816,185	04/02/2004	Hiroko Abe	12732-222001 / US7082	7858

26171 7590 03/21/2008
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EXAMINER	
ROY, SIKHA	
ART UNIT	PAPER NUMBER
2879	
MAIL DATE	DELIVERY MODE
03/21/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/816,185	ABE ET AL.	
	Examiner	Art Unit	
	Sikha Roy	2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on *31 January 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-40* is/are pending in the application.

4a) Of the above claim(s) *21-40* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *1/31/08*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on January 31, 2008 has been entered.

Claims 1-40 are pending. Claims 21-40 have been withdrawn.

Information Disclosure Statement

The information disclosure statement (IDS) submitted on 1/31/08 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 5, 6, 10, 11, 15, 16 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,689,492 to Yamazaki et al. and further in view of U.S. Patent 6,762,436 to Huang et al. and U.S. Patent 6,583,770 to Antila et al.

Regarding claim 1 Yamazaki discloses (Fig. 1 col. 8 lines 1-30, col. 9 lines 10-30) an electronic apparatus comprising a transistor TFT 202 over a substrate, a color filter 42 over the TFT, an insulating film 44 over the color filter, a light emitting element over the insulating film and electrically connected to the transistor. Yamazaki further discloses the light obtained from the light emitting element is white (Figs. 20A, 20B col. 33 lines 4, 5,13,14).

Yamazaki is silent about two polarizers having different polarization angles sandwiching the light emitting element and the filter.

Huang in same field of endeavor discloses (Fig. 2 column 3 lines 29-47) a transparent double side display OLED made from transparent anode and cathode structures transmitting light from both sides.

Therefore it would have been obvious to modify the cathode and the anode of Yamazaki transmitting light as disclosed by Huang for providing a dual display.

Yamazaki and Huang do not exemplify two polarizers sandwiching the light-emitting element and the color filter.

Antila in relevant field of dual display discloses (Fig. 1, 3 column 4 lines 45-60) light emitting element sandwiched between two polarizers 1 and 9 which are arranged in such a way that second polarizer 9 has a deflection angle 90° to the first polarizer 1 so that correct polarization level is obtained. Furthermore Antila discloses (col.1 col. 1

line 65 through col. 2 line 5) multicolor liquid crystal display is manufactured by adding a color filter in each pixel. All colors can be produced with pixels provided with red, green and blue filters. It is noted that by using two perpendiculary arranged polarizers on both sides of a panel light transmittance can be controlled.

Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to include two polarizers having different deflection angles sandwiching the light emitting element and the color filter of Yamazaki and Huang as suggested by Antila for providing correct transmittance of light from two sides.

Regarding claim 5 Yamazaki discloses (Fig. 20A) the electronic apparatus is a portable phone.

Regarding claim 6 Yamazaki, Huang and Antila disclose the claimed invention except two color filters on two sides sandwiching the light emitting device. Yamazaki teaches the color filter can be red, green or blue filter to permit only a desired color to pass and be seen by the viewer. It is noted that this device of Yamazaki, Huang and Antila emits light from two sides and hence it would have been obvious to include a color filter on each side of the light emitting element and hence two color filters sandwiching the light emitting element so that any desired color can be seen by the viewer.

Claim 10 essentially recites the same limitation of claim 5 and hence is rejected for the same reason.

Regarding claim 11 Yamazaki, Huang and Antila disclose all the limitations same as of claim 1. Yamazaki further teaches (Embodiment 11Fig. 21A col. 28 lines 40-60) the electronic apparatus comprising a first transistor 4704 for determining a current value supplied to the light emitting element 4708 and a second transistor 4706 for selecting emission or non-emission of the light emitting element, wherein the first transistor, second transistor are connected in series between a first power supply and the light emitting element. In Fig. 21A Yamazaki discloses the gate of the first transistor is connected to a second power supply and the first and second transistors have the same polarity (having the same structure).

Claim 16 essentially recites the limitations of claim 11 and claim 6 and hence is rejected for the same reasons (see rejection of claims 6 and 11).

Claims 15 and 20 essentially recite the same limitation of claim 5 and hence are rejected for the same reason.

Claims 2-4, 7-9, 12-14 and 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,689,492 to Yamazaki et al., U.S. Patent 6,762,436 to Huang et al. and U.S. Patent 6,583,770 to Antila et al. and further in view of U.S. Patent Application Publication 2004/0151829 to Boroson et al.

Yamazaki discloses the light emitting element exhibits blue emission. Yamazaki, Huang and Antila are silent about the light emitting element comprising a first light

emitting layer which exhibits blue emission and a second light emitting layer dispersed with a phosphorescent material with a concentration of 10 wt % or more in a host material, and exhibiting both phosphorescence from the phosphorescent material and emission from the phosphorescent material in the excimer state.

Regarding claim 2 Boroson in same field of endeavor discloses (Fig. 2B, para [0041], [0093], [00136], [00137]) a light emitting element comprising a cathode 50 and an anode 40 including an organic light emitting material in between and a color filter 52 formed over the second electrode 50 and wherein the light emitting element emits white light. Boroson further teaches (para [0059], [0071]) the first light emitting layer 44 (hole transporting layer) is formed of the same material 4, 4'-Bis [N- (1-Naphthalenyl)-N-phenylamino] biphenyl (α-NPD) as the first light emitting layer 503 of the instant application (See [055] of the instant application). Therefore, the layer 44 which, constitutes a similar material and structure as that of the first light emitting layer, exhibits blue emission with maximum intensity in a wavelength region of at least 400 and at most 500 nm. Further, Boroson teaches (para [0093] and [0110]) the phosphorescent material of the second light emitting layer 46 is an organic metal complex with platinum as a central metal (last chemical structure L48 in para [0110]) and the phosphorescent material is also doped with 10 wt.% to the host material. Applicant teaches (page 18, section [0058] of instant application) if the phosphorescent material is an organic metal complex with platinum as a central metal and doped with 10wt% to the host material, this phosphorescent material will generate phosphorescent emission and excimer emission simultaneously and has an emission spectrum with at

least two intensity peaks in a wavelength region of at least 500 nm and at most 700 nm. As such, the second light-emitting layer 46 can perform the claimed function. Boroson discloses this configuration provides improved performance from each color emission in a color OLED device and can be manufactured on a large scale.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the light emitting layer of Yamazaki to the light emitting layer comprising first light emitting layer which exhibits blue emission and a second light emitting layer dispersed with a phosphorescent material with a concentration of 10 wt % or more in a host material, and exhibiting both phosphorescence from the phosphorescent material and emission from the phosphorescent material in the excimer state as disclosed by Boroson for providing improved performance of the OLED and easier manufacturing on a large scale.

Regarding claims 3 and 4 Boroson discloses the first light emitting layer exhibits blue emission with maximum intensity in a wavelength region of at least 400 and at most 500 nm and the phosphorescent material generates phosphorescent emission and excimer emission simultaneously and has an emission spectrum with at least two intensity peaks in a wavelength region of at least 500 nm and at most 700 nm.

Claims 7-9 essentially recite the same limitations as of claims 2-4 and hence are rejected for the same reasons (see rejection of claims 2-4).

Claims 12-14 essentially recite the same limitations as of claims 2-4 and hence are rejected for the same reasons (see rejection of claims 2-4).

Claims 17-19 essentially recite the same limitations as of claims 2-4 and hence are rejected for the same reasons (see rejection of claims 2-4).

Response to Arguments

Applicant's arguments filed January 31, 2008 have been fully considered but they are not persuasive.

In response to applicant's argument that Antila does not describe two polarizers sandwiching light emitting element and color filter the Examiner submits the following. Yamazaki and Huang disclose light emitting element with color filter and emitting light in both directions. Antila discloses light emitting element sandwiched between two polarizers 1 and 9 which are arranged in such a way that second polarizer 9 has a deflection angle 90° to the first polarizer 1 so that correct polarization level is obtained. Furthermore Antila discloses (col.1 col. 1 line 65 through col. 2 line 5) multicolor liquid crystal display is manufactured by adding a color filter in each pixel. All colors can be produced with pixels provided with red, green and blue filters. It is noted that by using two perpendiculary arranged polarizers (with filters for colored pixels) on both sides of a panel light transmittance from pixels can be controlled. Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to include two polarizers having different deflection angles sandwiching the light emitting element and the color filter of Yamazaki and Huang as suggested by Antila for providing correct transmittance of light from two sides.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. USPN 6,778,229 to Ito et al. and USPN 7,218,365 to Chang et al. disclose use of two polarizers with two sides of liquid crystal with color filter.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sikha Roy whose telephone number is (571) 272-2463. The examiner can normally be reached on Monday-Friday 8:00 a.m. – 4:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar D. Patel can be reached on (571) 272-2457. The fax phone number for the organization is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Sikha Roy/
Primary Examiner, Art Unit 2879